IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

re Patent Application of: **Marrtens et al.**

Serial No. **09/840,208**

Filed: **April 23, 2001**

For: **Movement detector and method of installing such a detector**

Group Art Unit: **2878**

Examiner: **Glass, Christopher W.**

Attorney Docket No.: **PHNL 000217**

Date: **April 26, 2003**

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

On: April 22, 2003

By: John C Fox

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BRIEF OF APPELLANT

This is an appeal from the November 27, 2002 final rejection of claims 1, 3-6, 9 and 10 of the application. All requisite fees set forth in 37 CFR 1.17(c) for this Brief are hereby authorized to be charged to Deposit Account No. 501850. A Notice of Appeal was mailed on February 26, 2003.

REAL PARTY IN INTEREST

The real party in interest in this appeal is the assignee of all rights in and to the subject application, Koninklijke Philips Electronics, N.V. of The Netherlands.

RELATED APPEALS AND INTERFERENCES

To the best of the knowledge of the undersigned, no other appeals or interferences are known to Appellants, Appellants' legal representatives, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Of the original claims 1-10, claims 2, 7 and 8 have been cancelled. Claims 1, 3-6, 9 and 10 stand finally rejected as set forth in the final Office Action dated November 27, 2002, and are the subject of this appeal.

STATUS OF AMENDMENTS

No amendment to the specification and/or claims was offered subsequent to the final Office action. All amendments have been entered.

SUMMARY OF THE INVENTION

The invention relates to a movement detector which is capable of detecting movement of a body, for example a human, in a space and includes a light-sensitive sensor and optical means which are capable of projecting a multiple image of the space onto the sensor. (page 1, lines 1-4).

The optical means in such detectors consists of a plurality of lenses, or a multi-faceted lens, while the sensor, usually a passive infrared (PIR) sensor, is arranged, for example, over an opening in a ceiling above the lenses. Each of the lenses projects an image of the space below onto the sensor. When a person moves in the space, the (infrared) light intensity projected onto the sensor by the lenses will exhibit fluctuations that can be detected by means of the electronic circuitry coupled to the sensor so that, for example, an alarm can be triggered. (page 1, lines 5-12).

It is a drawback of such movement detectors that the lenses that are fitted underneath the ceiling occupy a comparatively large surface area, for example, having a diameter of a few centimeters. Consequently, the movement detector can be simply discovered by an intruder. Moreover, such a comparatively

large detector is an unsightly element on the ceiling. (page 1, lines 13-17).

The more accurate the detector must be, the more images of the space that must in principle be projected onto the sensor, and hence the more lenses that are required. Furthermore, the assembly of lenses should be constructed in such a manner that each individual lens is focused onto the sensor element for the detection distance applicable to this individual lens. This makes it practically impossible to vary the distance between the lens assembly and the sensor. (page 1, lines 18-23).

According to the invention, there is provided a simple, inexpensive, sensitive and reliable motion detector that can be used in a variety of ways and can be installed in a space in such a manner that it is less conspicuous than prior motion detectors. The optical means for the detector 1 of the invention include a mirror assembly 4 having a kaleidoscopic effect. Because of the kaleidoscopic effect, the space is imaged onto the sensor 5 in multiple form and, when the mirror assembly 4 forms a closed circumference, in principle in an infinite multiple, a very accurate sensing is realized. The movement detector 1 can be arranged in the ceiling 2 in such a manner

that only the mirror assembly 4 projects from the ceiling 2. The cross-section of this mirror assembly 4 need amount to a few millimeters only, so that the detector 1 can hardly be noticed. The mirror assembly 4 preferably constitutes an elongate body whose reflecting surface faces inwards. This body may be hollow and be formed by mirrors; it may also be formed by a solid body that is transparent to the relevant light, for example, a glass body whose side faces constitute inwards facing mirrors, either by interface reflection or by way of an externally deposited mirror layer. (page 1, line 24 through page 2, line 8).

The cross-section of the mirror assembly 4 varies along its longitudinal axis as from the sensor, that is, from a smallest to a largest cross-section or from a largest to a smallest cross-section. A "wide angle" effect and a "tele-effect", respectively, are thus achieved. (page 2, lines 22-25).

The invention also relates to a method of installing a movement detector in a space in order to detect movement of a body in the space, a light-sensitive sensor being arranged above a ceiling of the space while optical means which include a mirror assembly having a kaleidoscopic effect are arranged in such a manner that they project a multiple image of the space onto the sensor, the arrangement being such that the mirror

assembly extends essentially through the ceiling. (page 2, lines 28-33).

ISSUES

1. Are claims 1, 3-6 and 9 unpatentable over Keller ('688) in view of Chang ('346)?

2. Is claim 10 unpatentable over Keller ('688) in view of Yung ('203)?

GROUPING OF CLAIMS

Claims 1, 3-6 and 9 stand or fall together. Claim 10 stands alone.

ARGUMENT

1. Are claims 1, 3-6 and 9 unpatentable over Keller ('688) in view of Chang ('346)?

Claims 1, 3-6 and 9 are rejected under 35 USC 103(a) as being unpatentable over Keller ('688) in view of Chang ('346).

Keller discloses a movement detector including an optical system (one or more lenses), a radiation receiver and at least one internally reflecting prism surface between the lens

and the detector. Keller teaches that in accordance with the principle of his invention the prism surface(s) must be arranged substantially axially parallel to the axis of the optical system (col. 2, lines 29-33; col. 5, lines 31-34).

Chang's radiation detector includes a radiation deflector 6 positioned between a cylindrical lens 3 and a sensor 5. The function of radiation deflector 6 is to direct laterally-incoming radiation (S3, S4) to the sensor 5. Nevertheless, radiation deflector 6 has no active surfaces which are either internally reflecting or parallel to the optical axis 70 of lens 3. See, for example, Figs. 1, 2 and 4. In fact, surfaces 61 and 62 are externally reflecting.

As pointed out above, Keller teaches that his prism surface(s) must be both internally reflecting and axially parallel to the optical system axis. The skilled artisan would therefore view the teachings of Keller and Chang to be in conflict, and would not combine them in the manner suggested by the Examiner.

Even if Keller and Chang were combined to suggest a mirror assembly with a triangular cross section as suggested by the Examiner, they would fail to teach or suggest the feature of

a varying cross section of the mirror assembly along its longitudinal axis, as called for by claim 1.

In this regard, the Examiner has urged that such a varying cross section would be obvious in view of Keller, since he teaches the possibility of several polygonal formations for this element, in order to offer the same advantage of a wide range of incident angles.

However, as already pointed out above, Keller specifically teaches that in accordance with the principle of his invention the prism surface(s) must be arranged substantially axially parallel to the axis of the optical system (col. 2, lines 29-33; col. 5, lines 31-34). Chang teaches nothing in this regard. Thus, it would not be obvious to the skilled artisan in view of the cited combination of references to vary the cross section of the mirror assembly as taught and claimed by Appellants.

Accordingly, it is urged that the rejection is in error and should be reversed.

2. Is claim 10 unpatentable over Keller ('688) in view of Yung ('203)?

Claim 10 is rejected under 35 USC 103(a) as being unpatentable over Keller in view of Yung ('203).

The Examiner acknowledges that there is no teaching by Keller or Yung that the housing can be adjusted so that any portion of the detection structure would extend through the ceiling, nevertheless maintaining that it would be obvious to do so.

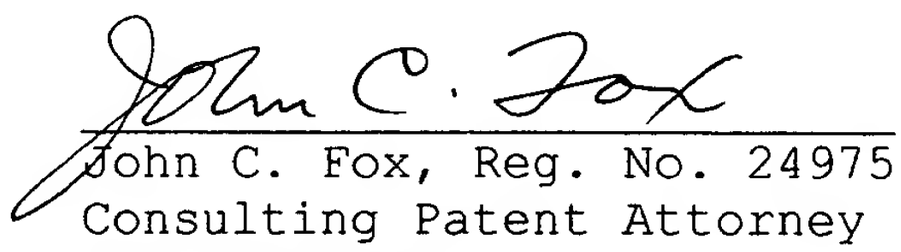
However, there is no suggestion by either reference that such an adjustment could be made or would be at all desirable. Absent any other piece of prior art providing such a suggestion, the Examiner has failed to make out a prima facie case of obviousness, and the hindsight gained from Appellant's own teachings cannot be relied upon to provide such a case.

Accordingly, it is felt that claim 10 is patentable over the combination of Keller and Yung, and it is urged that the rejection is in error and should be reversed.

CONCLUSION

It has been shown that the claimed invention distinguishes patentably over the single and combined teachings of the prior art references applied, and in particular, distinguishes over the combined teachings of Keller and Chang and Keller and Yung. Accordingly, Appellants respectfully request that the Board reverse the Examiner's final rejection and direct that the application proceed to issue.

Respectfully submitted,



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APPENDIX A

Claims on Appeal

1. A movement detector which is capable of detecting movement of a body in a space and includes a light-sensitive sensor and optical means which are capable of projecting a multiple image of the space onto the sensor, the optical means including a mirror assembly, the mirror assembly constituting an elongate body whose reflecting surface faces inwards, the mirror assembly having a kaleidoscopic effect, characterized in that the cross-section of the mirror assembly varies from a smallest to a largest cross-section along its longitudinal axis.

3. A movement detector as claimed in claim 1, characterized in that the optical means include a lens.

4. A movement detector as claimed in claim 3, characterized in that the sensor is situated near a first end of the mirror assembly whereas the lens is situated near the second end of the mirror assembly.

5. A movement detector as claimed in claim 1, characterized in that the cross-section of the mirror assembly forms a polygon.

6. A movement detector as claimed in claim 5, characterized in that the polygon is essentially a triangle.

9. A movement detector as claimed in claim 1, characterized in that the sensor includes an infrared sensor.

10. A method of installing a movement detector in a space in order to detect movement of a body in the space, a light-sensitive sensor being arranged above a ceiling of the space while optical means are arranged in such a manner that they project a multiple image of the space onto the sensor, characterized in that the optical means include a mirror assembly having a kaleidoscopic effect, the arrangement being such that the mirror assembly extends essentially through the ceiling.